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AWNING

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Fig. 1.

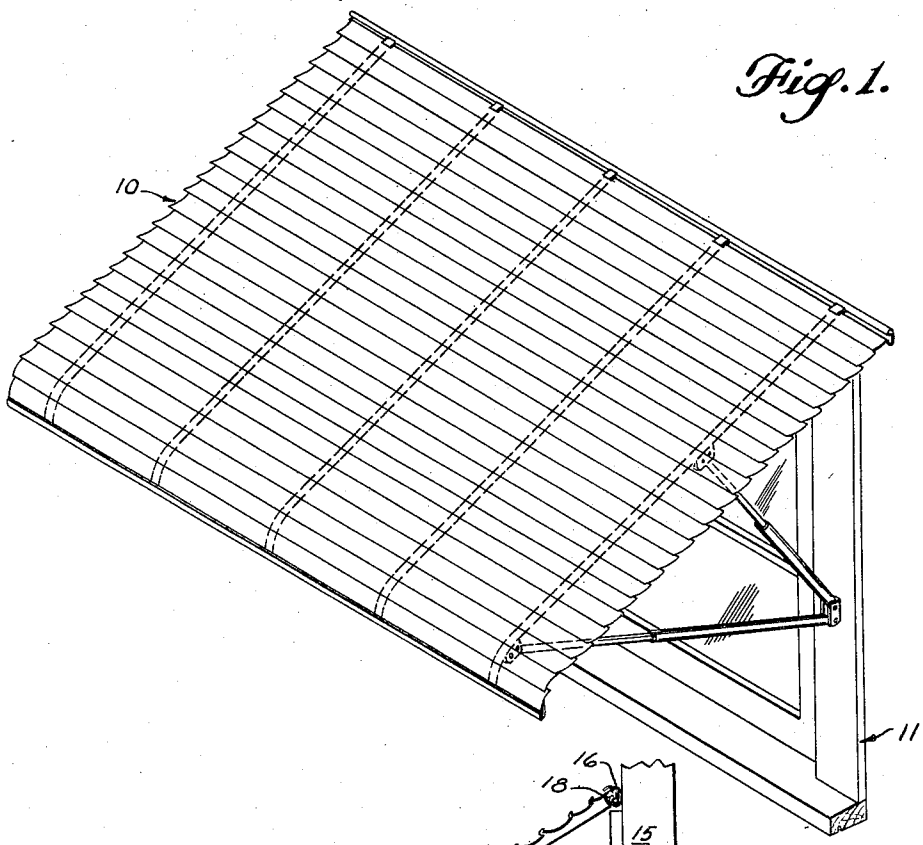
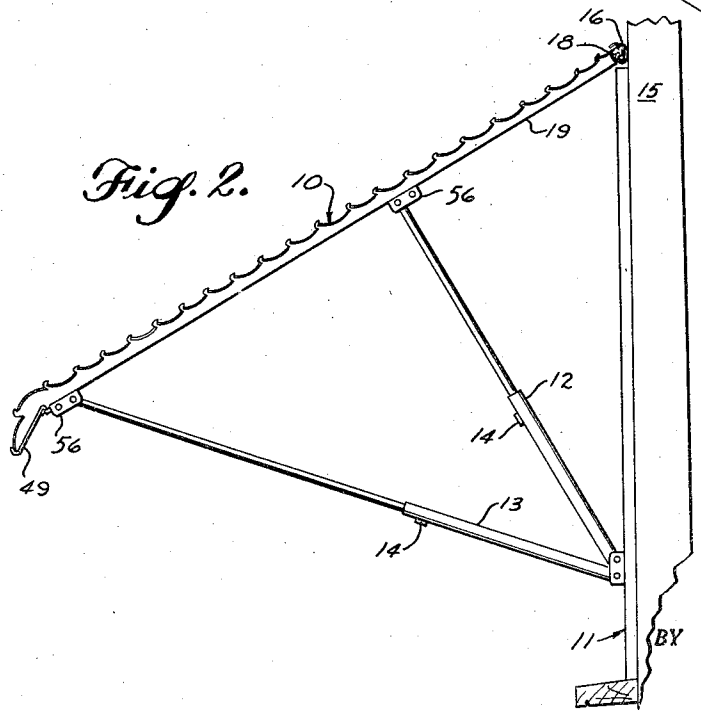


Fig. 2.



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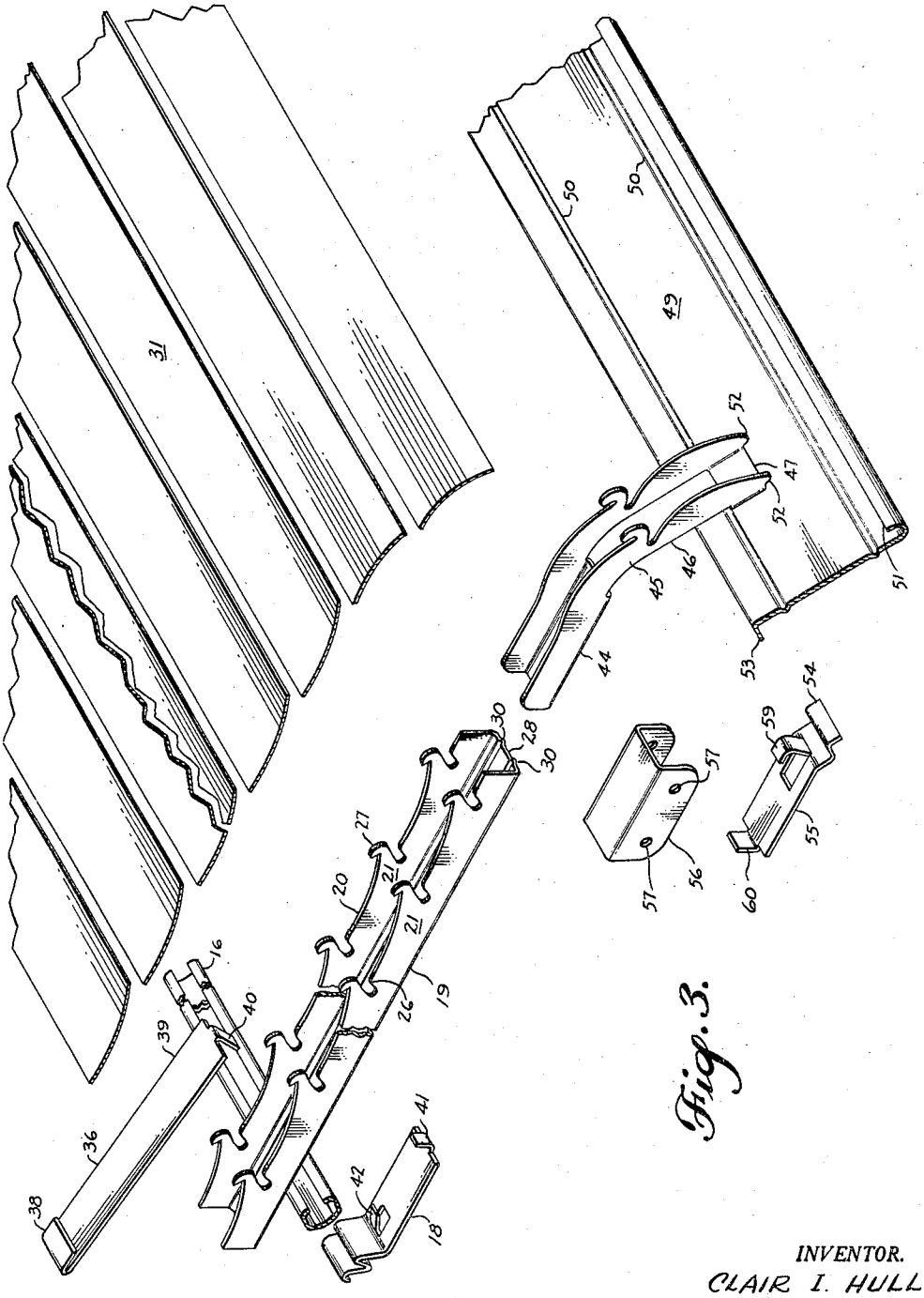

Fig. 3.

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Fig. 5.

Fig. 6.

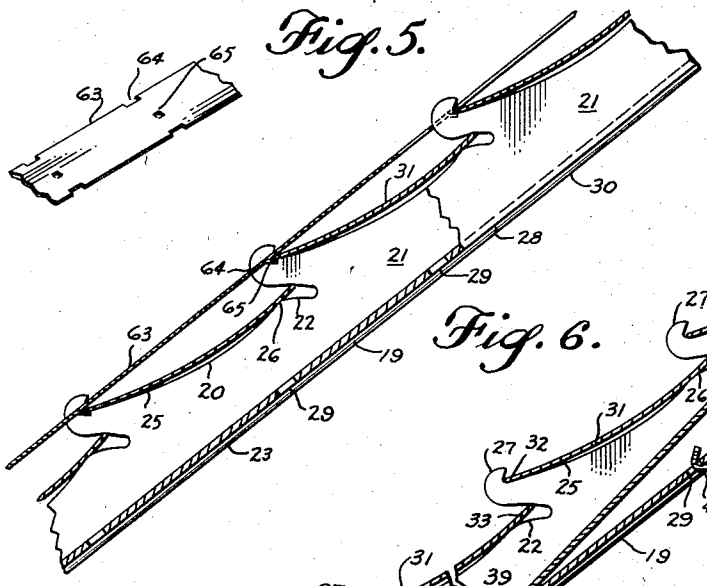
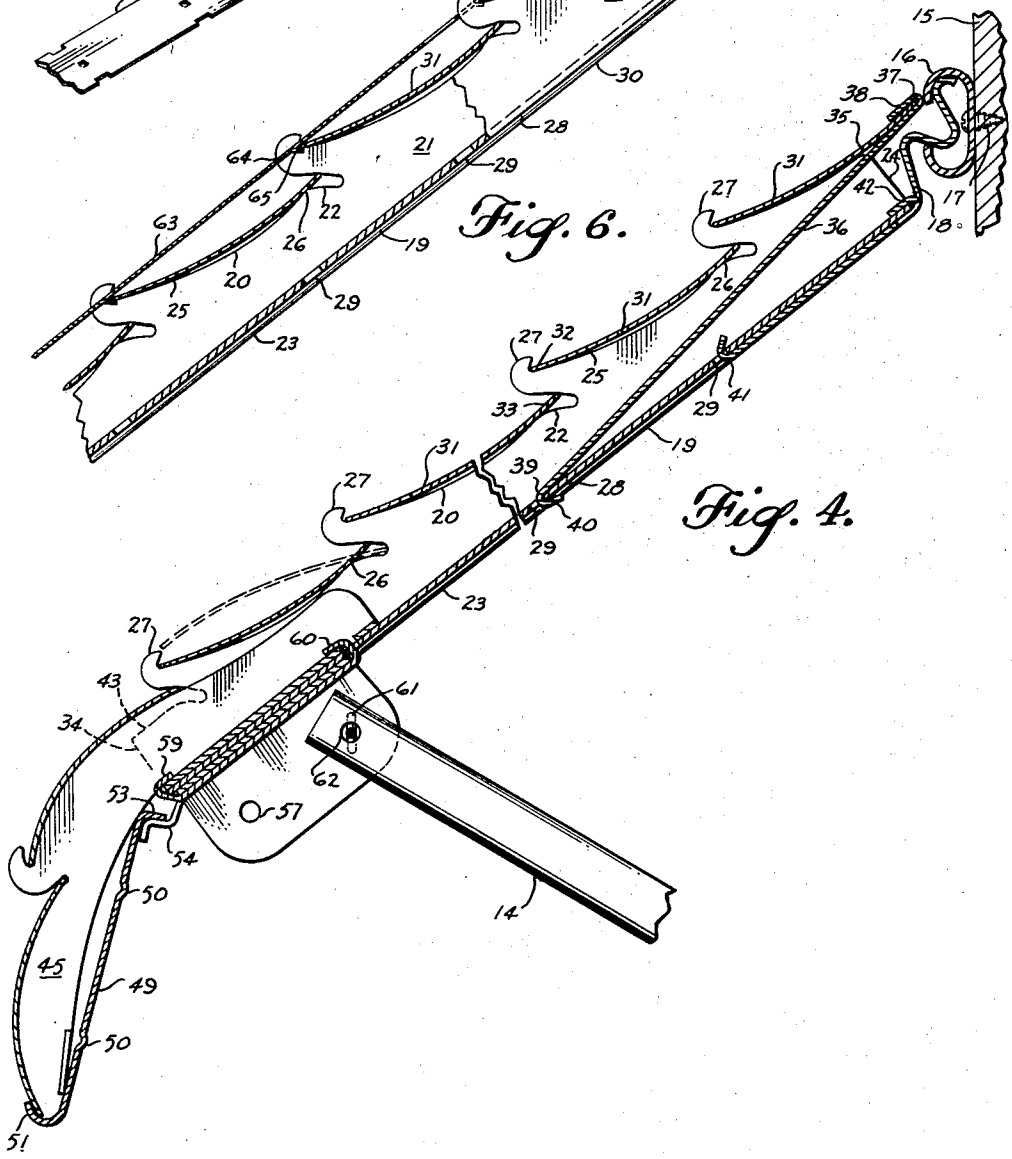


Fig. 4.



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AWNING

Filed March 15, 1955 4 Sheets-Sheet 4

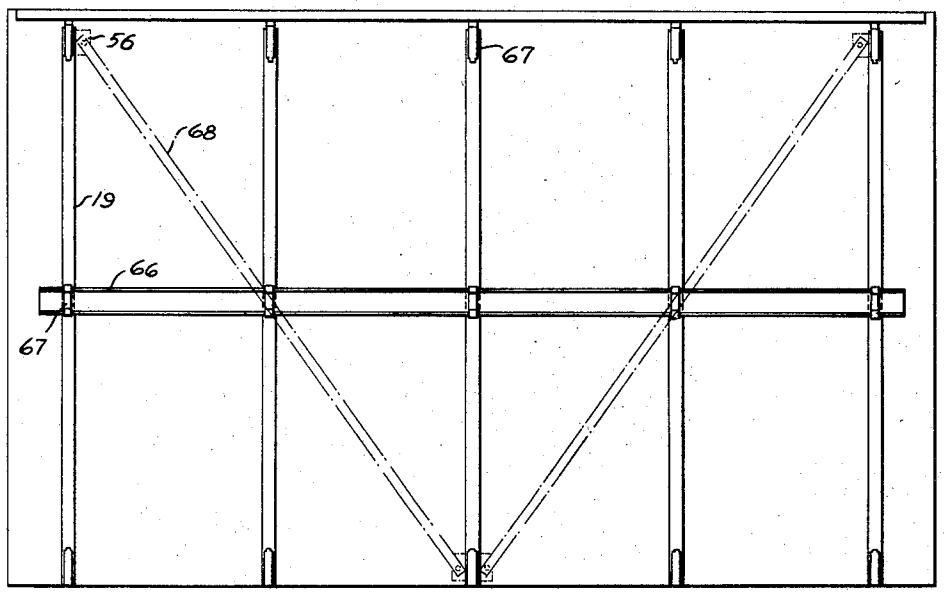

Fig. 7.

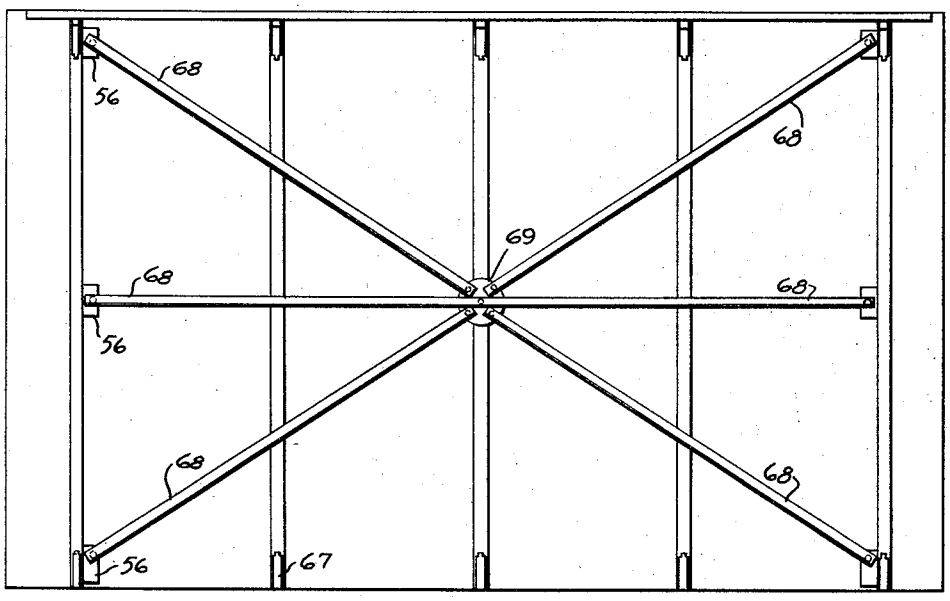

Fig. 8.

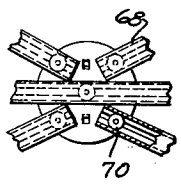

Fig. 9.

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United States Patent Office

2,859,494

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2,859,494

AWNING

Clair I. Hull, Seattle, Wash.

Application March 15, 1955, Serial No. 494,396

2 Claims. (Cl. 20—57.5)

The invention relates to window or door shading devices and more particularly to light weight awnings.

The purpose of the invention is to provide an attractive and effective awning which can be assembled from components easily compacted for shipment, handling and storage and installed conveniently with the aid of a minimum number of conventional tools and without the need for special skills.

The invention, briefly described, comprises a multi-pieced frame designed to receive resilient curved slats and to hold them firmly with their natural curvature altered establishing a gripping power inherent in this manner of construction.

Objects of the invention are to provide an awning which is (1) manufactured economically, (2) readily finished in eye appealing colors of lasting brilliance, (3) conveniently assembled and disassembled with a minimum of fasteners secured by bending their integral tabs.

The invention, its purpose and objects will be more readily understood as the following description is read in conjunction with the drawings in which:

Figure 1 is a perspective view of one embodiment of the awning mounted at a window,

Figure 2 is a side elevation of the awning and window shown in Figure 1,

Figure 3 is a perspective view of awning components before assembly,

Figure 4 is a broken sectional side view of the components shown in Figure 3 after their assembly and attachment to supports,

Figure 5 is a perspective view of an ornamental strip used in another embodiment,

Figure 6 is a partial, broken side view of the embodiment employing the ornamental strip shown in Figure 5,

Figure 7 is a view of the underside of an awning to illustrate how bracing members are employed, the dotted lines indicating other braces,

Figure 8 is a view similar to Figure 7 showing another bracing arrangement, and

Figure 9 is a detail of the center of the bracing shown in Figure 8.

The invention, described in detail with specific reference to these figures wherein similar parts are indicated by like numerals throughout the drawings, comprises a light weight awning for installation over windows and doors which is neat in appearance and effective in blocking direct sunlight while passing desirable indirect light.

Referring to Figure 1, the awning **10** is mounted partially above and opposite a window frame **11**. As shown in Figure 2, the angle of mounting can be varied by adjustment of the telescoping support arms **12** and **13**, each with a clamping screw **14**. The top is pivotally secured to the dwelling structure **15** (or to the window frame **11** if desired) by use of interfitting components: one, a supporting channel member **16** that is secured to the structure **15** with fasteners **17** parallel to the top of the window frame **11**, and the others, spaced, substantially Z-shaped tongues **18** as shown in Figure 4.

The awning **10** itself, before mounting, is assembled from minimum components similar to the types illustrated in Figure 3 and additional components, as necessary, illustrated in the remaining views.

The key parts of the assembly are the formed cut away rib channels **19** spaced across the width of the awning **10**. Each rib channel **19** has multiple evenly spaced cutouts **20** in its opposite legs or flanges **21**. The cutouts **20** form (1) a receiving slot **22** oblique to the channel corners **23** and directed toward the top end **24** of the rib channel **19**; (2) a concave edge **25** in each leg or flange **21** commencing near the center **26** of one side of the slot **22** and terminating at (3) a hook **27** located above the entrance of the slot **22** of the adjacent cutout **20**. Evenly spaced along the flat **28** of the channel rib **19** are openings **29** to receive fasteners as required. Also stiffening is obtained by forming the parallel grooves **30** in the flat **28**. The remaining components of the awning are directly or indirectly attached to these ribs, channels or rib channels **19**.

The cutouts **20** establishing the (1) slots **22**, (2) concave edges **25**, and (3) hooks **27** are formed in this manner for the specific purpose of receiving curved resilient slats **31** and thereafter holding them securely with their natural curvature altered creating the holding strength inherent in this assembly. When installed the slats **31** are taken with their concave side uppermost and one edge **33** is slipped into the receiving slot **22**. Thereafter, in order to get its other edge **32** beneath the hooks **27** the curvature of the slat can be increased or it can be reversed using as a fulcrum the ribs concave edge **25** where it joins the rib slot at **26**. Upon release of the installation forces the slat **31** tends to return to its natural curvature as its edge **33** withdraws from the slot **22**. The natural curvature is not quite regained, however, and the slat in its constrained altered curvature status bears against the boundaries of the cutouts **20** effectively securing itself. Unless removal forces are employed moving the slat **31** back down into the slot **22** and thereafter altering its curvature, the slat remains tightly secured to the rib channel **19**. Such forces are not encountered, except as created by human direction, so high velocity winds fail to dislodge the slats **31** making this awning construction very satisfactory for outdoor usage. The slats **31** extend the full width of the awning **10** supported at each end and elsewhere as needed by the rib channels **19**. They also overlap one another by virtue of the relative positions of the adjacent cutouts **20** so that an effective sun and rain shield is formed. Yet their overlapping portions **32**, **33** are spaced apart one above the other so that light is indirectly passed. Other components attached to the subassembly of the slats **31** and ribs **19** are added for either (1) support, (2) bracing, (3) appearance or (4) fastening purposes.

As mentioned previously Figure 3 illustrates the majority of all the various types of components before assembly in somewhat related positions, and Figure 4 shows them assembled with some added components. Referring to these Figures 3 and 4, it will be noted that the slats **31** continue to be secured in the manner previously described along the length of the ribs **19** until the rib ends **24** and **34** are approached where other slat attachment means are employed.

At the top end **24**, the rib **19** is terminated at **35** on the concaved edges **25** with a major portion of the concave edges **25** supporting the top slat **31**. Additional support of the uppermost slat **31** is furnished by a finger hook **36** having one end **38** that encompasses the top edge **37** of the slat **31** and another end **39** anchored to the rib **19** by an integral tab **40** that is passed through a rib opening **29** and bent back to grip the rib flat **28**. The finger hook end **38** slidably contacts the exterior of

the top supporting channel member **16** to substantially maintain the continuity of the awning protection from direct sunlight and rain.

The substantially Z-shaped tongues **18** mentioned previously in discussing the mounting of the awning are attached to the rib flats **28** by bending their paired integral tabs **41** and **42**.

At the lower end **34**, the rib **19** is terminated at **43**, a slight distance beyond a hook **27**. An additional supplemental rib **44** is optionally employed at this end **34** to give a rounded edge appearance to the awning. It overlaps rib **19**, a distance equal to approximately one slat width, fitting inside the rib flanges **21** and the flat **28**. The extending portion **45** is curved downward and to facilitate its bending the flat is partially removed at **46** leaving an end cross brace **47**. The legs or flanges **48** of the extension rib **45** are formed to continue the slat spacing defined along the rib **19**, however, the installation of the two slats **31** does not require that their curvature be reversed for they are both involved in subassemblies that permit their complete trapping. The uppermost slat **31** of the two on the extension rib **45** is positioned before the extension **45** is secured to the rib **19** and the lower is positioned before installation of the bottom reinforcing trim flange **49**. The latter is a substantially flat piece that extends across the bottom of the awning behind the rib extension **45** strengthened by integral grooves **50**. It is positioned as its lower curved edge **51** overlays the bottom points **52** of the rib extension **45** and its top flanged edge **53** is supported by the formed tab **54** on the fastener **55**.

This fastener **55** used on each rib **19** at its lower end **34** is the sole fastener used to connect all the members or components together at this location in addition to serving as a support for the reinforcing trim flange **49** as just mentioned. Before it is positioned, where braces **14** are to be located, the bracing connector **56**, a short section of channel with multiple holes **57** at selective locations in each flange **58**, is placed over it between two tabs **59** and **60** integrally formed from the fastener **55**. Thereafter the fastener **55** is moved so (1) its tab **54** supports the trim flange **49**; (2) its tab **59** overlaps the upper edge of the flat opening **46** and (3) its tab **60** projects up through typical openings **29** in the flats of both the rib **19** and the rib extension **44**. With all the lower end frame members held firmly in their positions the fastener tab **60** is bent over into contact with the inside surface of the flat of rib extension **45**.

The braces **14** are secured to the bracing connectors **56** by fasteners **61** which are passed through holes **57** in the connector **56** and holes **62** in the braces **14** and bent to complete the attachment of the adjustable braces **14** to the awning **10**, as illustrated in Figures 2 and 4.

Figure 5 is a perspective view of an ornamental strip **63** which is optionally placed over the slats **31** right above each rib **19**. The cutouts **64** are made to accommodate the rib hooks **27** and tabs **65** grip the lower slat edges **32** as the strip **63** is fitted into place as shown in Figure 6. It extends over all slats **31** terminating at the top in the finger hook end **38** (not shown in Figure 6) and at the bottom in the trim flange curved edge **51** (not shown in Figure 6).

Where wide windows or doors are to be shaded by this awning construction, it is desirable to use additional bracing, examples of which are illustrated in Figures 7 and 8. A central channel **66** extending across the width of the

awning **10** and fastened to each rib **19** by a bendable tab fastener **67** may be sufficient. If however, a greater width is involved diagonal channel tubes **68** are employed (shown by dotted lines in Figure 7). Or as shown in Figure 8, where even larger awning areas are involved multiple channel tubes **68** are used, emanating from a center disk **69**. The tubes are secured to the disk **69** and other bracing connectors **56** by use of a slightly raised flat circular washer **70** that fits the interior of the channel tubes **68** as shown in Figure 9. All these components are easily secured to the ribs **19** by using fasteners with bendable tabs that pass through rib openings **29** in the same manner as described previously in conjunction with other subassemblies.

I claim:

1. In an awning of the type comprising ribs and rib supported slats, the improvement for receiving and holding precurved slats in a concavely upward stressed condition which comprises supporting ribs of channel shaped cross-section with the channel legs upstanding, said channel legs having slat receiving openings consisting of: a hook for receiving one edge of the slat; a slot for receiving the other edge of the slat; and a concave slat support extending from the hook to the slot, the distance between the hook and the bottom of the slot being at least the width of the slat and the slot width being greatly oversized relative to the slat whereby a normally cocavely curved slat can be inserted between the slot and the hook when bent to a convex curve and thereafter in reassuming its normally concave shape is free to partially withdrawn from the slot and come to rest with one edge engaged in the slot crosswise contacting the slot side wall, with the other edge engaged by the hook, and with the bottom of the slat resting at least partially against the concave slat support.

2. A slat type awning comprising spaced supporting ribs of channel shaped cross-section positioned with the channel legs upright and securing means integral with the ribs in an overlapping relationship formed by cutting the legs identically to provide: a hook disposed to receive one edge of a slat; a slot for receiving the other edge of the slat; and a concave slat support extending from the slot to the hook, the distance between the hook and the bottom of the slot being at least the width of the slat, and the slot width being greatly oversized relative to the slat whereby a normally concavely curved slat can be inserted between the slot and the hook when bent to a convex curve and thereafter in reassuming its normally concave shape is free to partially withdraw from the slot and come to rest with one edge engaged in the slot crosswise contacting the slot side wall, with the other edge engaged by the hook, and with the bottom of the slat resting at least partially against the concave slat support, the slot further being formed at the underside of the hook which retains an edge of the next adjacent slat whereby the slats of the awning are retained in overlapping relationship.

References Cited in the file of this patent

UNITED STATES PATENTS

232,883	Carey, Jr.	Oct. 5, 1880
1,536,520	Parker	May 5, 1925
2,650,393	Coward	Sept. 1, 1953
2,657,437	Moser	Nov. 3, 1953
2,709,841	Knabeschuh	June 7, 1955
2,720,684	Toti	Oct. 18, 1955